sandstone mostly changed to quartzite which have become included during the penetration of the sedimentaries by the molten magma. In the minds of the uninitiated this crater cone must have been produced by quite different agencies than were at work on Coon Mountain, whereas probably the difference lies in the degree and not the kind of action. It would seem quite probable that, on the border of a region of such extreme volcanic activity as has given rise to the most lofty mountains in Arizona, there might have been an explosion lacking the energy necessary to bring the igneous mass or even fragments of it to the surface. Further, the recession of the magma, accompanied by whatever portions of the strata had become metamorphosed by contact, would account for the precipitous walls of the crater as well as the absence of fused material. The explosion may have been of rather an incipient nature, throwing comparatively little of the material outside of the crater, although, considering the nature of the material, soft sandstone, whatever blocks had been thrown out could easily have become disintegrated and simply added to the mesa soil already made up of the same material. On the southern slope of the crater there are found quite a number of sandstone blocks. Whether these were actually thrown out of the crater or simply broke off from the crumpled rim and rolled down the slope can not be determined.

It would seem, then, that the phenomenon exhibited here can be satisfactorily explained as having been produced by an explosion followed by an entire lack of volcanic activity, as first explained by G. K. Gilbert, of the United States Geological Survey. The meteorites found here probably had nothing to do with the formation of the depression. The earth either encountered a meteoric swarm or, what is more likely, a large meteor fell to pieces on striking the earth's atmosphere. The latter hypothesis is considered more probable, for the reason that one would expect a swarm to have had the fragments spread out to a greater extent than is evidenced by the rather confined area in which they are found. It is to be concluded, then, that these two striking phenomena are simply coincidences and should not be interpreted as cause and effect.

The endeavor to explain the origin of the crater by some other than volcanic agencies has led some writers to suggest that it may have been produced by solution. According to this hypothesis the depression was caused by the falling in of the top layers of strata forming the roof of a nearly circular cavity which was a portion of an underground water way. This is supposed to have been the cause of the existence of the peculiar circular depression located near Camp Verde known as Montezuma's Well. Water still exists here and the fact that it never becomes stagnant or brackish is well known. This hypothesis can not be applied to Coon Mountain, however, for the reason that it leaves unexplained the most noticeable feature of the phenomenon, namely, the upturned strata which forms the rim. This could have been produced only by means of forces working from below.

F. N. GUILD

UNIVERSITY OF ARIZONA,
January 22, 1907

CURRENT NOTES ON METEOROLOGY AND CLIMATOLOGY

MONTHLY WEATHER REVIEW

THE articles of most general interest in Nos. 1 and 2, Vol. XXXV., 1907, of the *Monthly Weather Review* are as follows:

"Is not Honesty the wisest Policy?" is the title of a brief note by Professor Cleveland Abbe, in which it is pointed out that the officials and observers of the Weather Bureau are often urged by interested persons not to report tornadoes, or frosts, or droughts, or other meteorological phenomena, because of the injury which may be done by such announcements to local business enterprises and land booms. Professor Abbe rightly puts strong emphasis on the fact that it is a wrong "to mutilate or suppress the record of an observation of a phenomenon of nature" as it is "also wrong to make a bad use of the record."

"The Adirondack Rainfall Summit," by R.

E. Horton. An analysis of the rainfall over the Adirondack plateau, based on the records of twenty-five stations, reduced to the uniform period 1901–5. A map with 1,000-foot contours, the principal watershed lines and isohyetals is given, as is a profile along lat. 43°30′ N., extending eastward from Lake Ontario on a line running a few miles south of North Lake. There is evident a rapid increase of rainfall with altitude on the southwest slope; then a rapid decrease as the altitude increases proceeding northeast. The maximum rainfall is shown enclosed by the isohyetal line of 55 inches.

"The Climate of Kansas," a copy of the stenographic report of a hearing before the Committee on Agriculture of the House of Representatives on January 8, 1907, at which the Chief of the Weather Bureau testified, together with a supplementary note prepared by Professor Moore in order to counteract certain erroneous statements which found their way into the papers in regard to his testimony. The purpose of the testimony and of the supplementary statement is to show that there has been no permanent change in the climate of the central portion of the Great Plains since Weather Bureau records have been kept.

"The Climate of Yukon Territory," by R. F. Stupart, director of the Meteorological Service of Canada. A study of all available records.

"Problems in Meteorology," by C. F. von Herrmann and Professor Cleveland Abbe; continuation of a paper begun in the December, 1906, number of the *Review*.

"The Growth of Fog in Unsaturated Air," by Frank W. Proctor.

"Notes of a Meteorologist in Europe," by Professor A. J. Cox, who has recently visited the chief meteorological centers of Europe.

"Meteorological Work at Camp Wellman, Dane's Island, Spitzbergen," gives the results of meteorological observations made by H. B. Hersey, of the U. S. Weather Bureau, who accompanied the Wellman expedition as meteorological observer. The period covered is June 26 to August 31, 1906.

"A Climatic Sketch of Tacoma, Wash.," by E. B. Gittings, Jr. "The object of this sketch is to present in popular form as complete a description of the climate of this station as is possible without the introduction of extensive tabular compilations of data."

"Snow Rollers at Canton, N. Y.," by M. L. Fuller. An illustrated account of some well-developed snow rollers formed on February 19, 1907.

"Long-Range Seasonal Forecasts for South Africa," by Professor Abbe; a review of recent investigations by Mr. D. E. Hutchins, conservator of forests for South Africa. Sunspots have nothing to do with the variations of rainfall, but Mr. Hutchins has shown that there are certain correlations between the rainfall on the east and on the west, so that when one goes up the other goes down.

"Panama Rainfall," by Professor E. B. Garriott; a general description of the rainfall conditions and amounts, which brings clearly to view the controls, average amounts and the relation to the canal construction.

"Fog on the Newfoundland Banks," by C. T. Brodrick; a bibliographic study of these important fogs, and of the different methods of charting them.

We are glad to note the publication of an excellent index to Vol. XXXIV (1906) of the *Monthly Weather Review*. We have, on previous occasions, called attention to the fact that the index of the *Review* has in the past been very unsatisfactory.

BUCHAN

To the names of von Bezold, Paulsen and Russell, whose work for meteorology has recently been brought to a close by death, we must now add the name of Buchan. Alexander Buchan (1829–1907) began his real activities in meteorology in 1860, when called to Edinburgh to be secretary of the Scottish Meteorological Society, in which position he did most effective work of a pioneer kind in organizing, collecting and publishing meteorological observations. He published his "Handy Book of Meteorology" in 1867 (second edition, 1868), and his "Introductory Text Book of Meteorology" in 1871. Buchan

was the first to trace the path of a "low" across the Atlantic, and to chart the mean pressure of the atmosphere and the prevailing winds of the globe. His best-known work is probably that in connection with the meteorological discussions of the *Challenger* expedition. He was more recently associated with Dr. A. J. Herbertson in the preparation of the splendid "Atlas of Meteorology." He was from the beginning actively interested in Ben Nevis Observatory, and published several discussions of Ben Nevis meteorology. Buchan was a member of the Meteorological Council (1887); an honorary LL.D. of Glasgow; F.R.S. of London and Edinburgh; the first recipient of the Symons Medal of the Royal Meteorological Society; an honorary member of numerous foreign scientific societies. Dr. W. N. Shaw (*Nature*, May 23) well says: "It is not too much to say that the work of Buchan's life has contributed largely to justify the claim of meteorology to be regarded as a separate scientific subject, entitled to separate academic recognition." R. DEC. WARD

THE RUSSELL SAGE INSTITUTE OF PATHOLOGY

MRS. RUSSELL SAGE has given the sum of $300,000 to found what will be known as the Russell Sage Institute of Pathology as an adjunct to the City Hospital on Blackwell's Island. The securities for that amount have been delivered to the Russell Sage Foundation, and the gift has been formally accepted by the Medical Board of the City Hospital.

Resolutions were adopted by the board thanking Mrs. Sage for this magnificent gift, and expressing appreciation for the honor conferred upon the hospital, "realizing that this has been the first occasion upon which a municipal hospital in this city has been so generously provided for by a private individual for the purpose of fostering medical education and research. "It is the hope of the Medical Board," the resolutions continue, "that this gift of Mrs. Sage may establish a precedent for others which may lead to like endowment in other municipal institutions."

Commissioner Hebberd of the Department of Public Charities has issued a statement in which was laid down the terms of the gift as received in a communication from Mr. Robert W. De Foster, counsel for Mrs. Sage. Mr. De Foster's letter on the subject said:

> This institute is to be organized according to the plans and under the direction of Drs. E. G. and T. C. Janeway, with whom are to be associated on the board of trustees, as *ex-officio* members, the Commissioner of Public Charities of the City of New York and the president of the medical board of the City Hospital, and as individual members Dr. D. Bryson Delavan, Dr. Simon Flexner and Professor Graham Lusk. The institute will be promptly incorporated.
>
> The effective work of the institute depends, as you have stated, upon the maintenance and continuance of the helpful relations between the Department of Public Charities and those who are now performing the duties of pathologists to these hospitals. The income of the institute from this source will be based upon the continuance of such cooperation to the satisfaction of the gentlemen named as trustees.
>
> Mrs. Sage hopes that as the result of this endowment the research and educational work of these hospitals will be largely increased, to the good of the general public, and particularly in dealing with the diseases to which old age is liable.

SUMMER FIELD MEETING OF THE SECTION OF GEOLOGY AND GEOGRAPHY OF THE AMERICAN ASSOCIATION

IN the issue of SCIENCE for May 10 was given the full program of the meeting of Section E—Geology and Geography—of the American Association for the Advancement of Science, from July 3 to 11. It may be added that the subject of the address of Dr. Lane, the vice-president, is "The Early Surroundings of Life." It will be given in the auditorium of the Catholic Summer School, and will be complimentary to the members of the Champlain Assembly. The noon addresses to be given each day after the lunch hour on a subject connected with the excursion of the day have been arranged as follows: "Abandoned Shorelines," by Professor Woodworth; "Iroquois Extinction," by Professor Fairchild; "Paleogeography of the Cambro-Siluric of the Region from the Standpoint of